

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A printing device, having at least one electro-photographic printing unit (10.1), to which a transfer medium (12) for transferring a toner powder to respectively one substrate (14.1, ..., 14.5, 14.6) in a transfer zone is assigned, wherein one or ~~several~~ more substrates (14.1, ..., 14.5, 14.6) can be conducted through the transfer zone by ~~means of~~ a transport system (16), the printing device comprising:

~~characterized in that~~

the transport system (16) for ~~the one or for every~~ each said substrate (14.1, ..., 14.5, 14.6) ~~each has~~ having a receiving device (18.1, ..., 18.5, 18.6) which can be heated, to which one or more ~~several~~ heating elements (20.1, ..., 20.5, 20.6) for introducing heat energy into the substrate (14.1, ..., 14.5, 14.6) are assigned, and

a cooling device (28) is assigned to the transfer medium (12) of ~~the one or of every~~ each said printing unit, which removes heat energy from the transfer medium (12).

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2. (Currently Amended) The printing device in accordance with claim 1, wherein each said ~~characterized in that the or every~~ heating element (20.1, ..., 20.5, 20.6) is arranged on ~~the a~~ side of the substrate (14.1, ..., 14.5, 14.6) facing away from the ~~or from every~~ receiving device (18.1, ..., 18.5, 18.6) of the transport system (16).

3. (Currently Amended) The printing device in accordance with claim ~~[[1 or]]~~ 2, wherein ~~characterized in that the or every~~ substrate (14.1, ..., 14.5, 14.6) is fixed in place ~~supported~~ at least partially on the ~~or on every~~ receiving device (18.1, ..., 18.5, 18.6).

4. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 3, wherein ~~characterized in that the or every~~ receiving device (18.1, ..., 18.5, 18.6) has an approximately frame-shaped receiving structure for supporting the respective ~~respectively one~~ substrate (14.1, ..., 14.5, 14.6).

5. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 4, wherein ~~characterized by~~ a plurality of printing units (10.1, ..., 10.5, 10.6) are arranged one behind the other for imprinting each said substrate ~~the or every~~ (14.1, ..., 14.5, 14.6), ~~each~~ in a different color.

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6. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 5, wherein ~~characterized in that~~ the transport system (16) conducts a plurality of the substrates (14.1, ..., 14.5, 14.6) arranged one behind the other through the transfer zones of each ~~one~~ of the printing units (10.1, ..., 10.5, 10.6).

7. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 6, wherein ~~characterized in that~~ the transport system (16) moves the ~~or every~~ substrate (14.1, ..., 14.5, 14.6) continuously ~~[[on]]~~.

8. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 7, wherein ~~characterized in that~~, upstream of the first printing unit (10.1) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the transport direction (A) of the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6), the ~~or every~~ substrate (14.1, ..., 14.5, 14.6) can be received in a separate receiving device (18.1, ..., 18.5, 18.6) and can be sequentially conducted to the printing units (10.1, ..., 10.5, 10.6).

9. (Currently Amended) The printing device in accordance with ~~one of claims 1 to claim 8, wherein characterized in that,~~ downstream of the last printing unit (10.6) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the transport direction (A) of the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6), the ~~or every~~ substrate (14.1, ..., 14.5, 14.6) can be removed from the respective receiving device (18.1, ..., 18.5, 18.6).

10. (Currently Amended) The printing device in accordance with ~~one of claims 1 to claim 9, wherein characterized in that,~~ following the removal from the receiving device (18.1, ..., 18.5, 18.6)[[,]] the ~~or every~~ substrate (14.1, ..., 14.5, 14.6) can be transferred to a transfer unit or a sorting unit.

11. (Currently Amended) The printing device in accordance with ~~one of claims 1 to claim 10, wherein characterized in that~~ the transport system (16) has a conveying device (50), which transports the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6) along a guidance arrangement (52).

12. (Currently Amended) The printing device in accordance with ~~one of claims 1 to claim 11, wherein characterized in that~~ the conveying device (50) has at least one of a toothed belt, a belt, or like and a conveying element.

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13. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 13, wherein ~~characterized in that~~ the guidance device can be an arrangement of one of guide rods (52), ~~[[or]]~~ guide rails, ~~or the like~~ and guide elements.

14. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 13, wherein ~~characterized in that~~ the guidance arrangement (52) ~~can constitute~~ forms one of a closed track, ~~[[or]]~~ and a conveying circuit~~[[,]]~~ for conveying the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6).

15. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 14, wherein ~~characterized in that~~ a cleaning device (54) for the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6) is arranged at ~~[[the]]~~ a closed track or the conveying circuit.

16. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 15, wherein ~~characterized in that~~ the cleaning device (54) is arranged following the last printing unit (10.6) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the conveying direction of the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6), and the ~~or every~~ receiving device (18.1, ...,

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18.5, 18.6) can be introduced into the cleaning ~~installation~~ device (54) following the removal of the ~~or every~~ substrate (14.1, ..., 14.5, 14.6).

17. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 16, wherein ~~characterized in that~~ the cleaning device (54) is arranged upstream of the first printing unit (10.1) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the conveying direction (A) of the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6).

18. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 17, wherein ~~characterized in that~~ the ~~or every~~ substrate (14.1, ..., 14.5, 14.6) ~~can be~~ is respectively received in a separate receiving device (18.1, ..., 18.5, 18.6) downstream of the cleaning device (54) and upstream of the first printing unit (10.1) of the printing units (10.1, ..., 10.5, 10.6) in the conveying direction (A) of the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6).

19. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 18, wherein ~~characterized in that~~ the transfer medium (12) is ~~embodied as~~ a transfer roller or a transfer belt containing at least a portion of the cooling device (12).

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20. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 19, wherein ~~characterized in that~~ the transfer medium (120) of the ~~or every~~ printing unit (10.1, ..., 10.5, 10.6) has a lower temperature in the transfer zone formed with the ~~or every~~ substrate (14.1, ..., 14.5, 14.6)[[,]] at least in ~~the~~ an area of the contact surface, than ~~the~~ a surface of the substrate (14.1, ..., 14.5, 14.6).

21. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 20, wherein ~~characterized in that~~ the ~~or every~~ substrate (14.1, ..., 14.5, 14.6) rests on a conductive support of the receiving device (18.1, ..., 18.5, 18.6)[[,]] and ~~that~~ the support is charged with a reversed polarity sign compared with the charge of the toner.

22. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 21, wherein ~~characterized in that~~ the ~~or every~~ substrate (14.1, ..., 14.5, 14.6) is moved by ~~means of~~ the transport system (16) ~~past~~ beyond the transfer medium (12) synchronously with ~~the~~ a circumferential speed of the transfer medium (12), and ~~that~~ a voltage which, [[in]] with respect to the transfer medium, is opposite to the charge of the toner, is applied to the ~~or every~~ receiving device (18.1, ..., 18.5, 18.6) in the transport system (16).

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23. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 22, wherein characterized in that each said substrate (14.1, ..., 14.5, 14.6) ~~can be~~ is charged by ~~means of one or several~~ the heating elements (20.1, ..., 20.5, 20.6) embodied as at least one of infrared radiation devices, ~~and/or as hot-air blowers and/or~~ and by ~~means of~~ charging with heat energy.

24. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 22, wherein characterized in that each said substrate (14.1, ..., 14.5, 14.6) can be charged with heat energy by ~~means of one of a~~ metal tape heating ~~[[or]]~~ and a metal foil heating device, wherein ~~[[the]]~~ a wavelength of ~~[[the]]~~ heat radiation can be exactly matched to ~~[[the]]~~ an absorption maximum of at least one of the substrate ~~and/or of~~ and a ~~[[the]]~~ plastic matrix of the toner.

25. (Currently Amended) The printing device in accordance with ~~one of claims 1 to~~ claim 24, wherein characterized in that a temperature sensor (26) is assigned to the ~~or every~~ substrate (14.1, ..., 14.5, 14.6), ~~and that~~ at least one of the heating element (20.1, ..., 20.5, 20.6) ~~and/or~~ and the transport system (16) can be controlled by ~~means of~~ a control device (24) as a function of ~~the~~ a signal emitted by the temperature sensor (26).

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26. (Currently Amended) The printing device in accordance with ~~one of claims 1 to claim 25, wherein characterized in that~~ the temperature sensor (26) is a pyrometer.

27. (Currently Amended) The printing device in accordance with ~~one of claims 1 to claim 26, wherein characterized in that~~ a conditioned air flow is directed onto ~~the~~ a surface of at least one of the transfer medium (12), ~~and/or and~~ at least one or several liquid-cooled contact ~~rollers~~ roller of the cooling device (28) roll off on the transfer medium (12).

28. (Currently Amended) The printing device in accordance with ~~one of claims 1 to claim 27, wherein characterized in that~~ the cooling device (28) removes heat energy from the transfer medium (12) downstream of the transfer zone and upstream of the photo-conductor (30) of the printing unit (10.1), viewed in the transport direction of the transfer medium (12).

29. (New) The printing device in accordance with claim 1, wherein the substrate (14.1, ..., 14.5, 14.6) is fixed in place at least partially on the receiving device (18.1, ..., 18.5, 18.6).

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30. (New) The printing device in accordance with claim 1, wherein the receiving device (18.1, ..., 18.5, 18.6) has an approximately frame-shaped receiving structure for supporting the respective substrate (14.1, ..., 14.5, 14.6).

31. (New) The printing device in accordance with claim 1, wherein a plurality of printing units (10.1, ..., 10.5, 10.6) are arranged one behind the other for imprinting each said substrate (14.1, ..., 14.5, 14.6) in a different color.

32. (New) The printing device in accordance with claim 1, wherein the transport system (16) conducts a plurality of the substrates (14.1, ..., 14.5, 14.6) arranged one behind the other through the transfer zones of each of the printing units (10.1, ..., 10.5, 10.6).

33. (New) The printing device in accordance with claim 1, wherein the transport system (16) moves the substrate (14.1, ..., 14.5, 14.6) continuously.

34. (New) The printing device in accordance with claim 1, wherein upstream of the first printing unit (10.1) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the transport direction (A) of the receiving

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device (18.1, ..., 18.5, 18.6), the substrate (14.1, ..., 14.5, 14.6) can be received in a separate receiving device (18.1, ..., 18.5, 18.6) and can be sequentially conducted to the printing units (10.1, ..., 10.5, 10.6).

35. (New) The printing device in accordance with claim 1, wherein downstream of the last printing unit (10.6) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the transport direction (A) of the receiving device (18.1, ..., 18.5, 18.6), the substrate (14.1, ..., 14.5, 14.6) can be removed from the respective receiving device (18.1, ..., 18.5, 18.6).

36. (New) The printing device in accordance with claim 1, wherein following removal from the receiving device (18.1, ..., 18.5, 18.6) the substrate (14.1, ..., 14.5, 14.6) can be transferred to a transfer unit or a sorting unit.

37. (New) The printing device in accordance with claim 1, wherein the transport system (16) has a conveying device (50), which transports the receiving device (18.1, ..., 18.5, 18.6) along a guidance arrangement (52).

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38. (New) The printing device in accordance with claim 1, wherein the conveying device (50) has at least one of a toothed belt, a belt, and a conveying element.

39. (New) The printing device in accordance with claim 1, wherein the guidance device can be an arrangement of one of guide rods (52), guide rails, and guide elements.

40. (New) The printing device in accordance with claim 1, wherein the guidance arrangement (52) forms one of a closed track, and a conveying circuit for conveying the receiving device (18.1, ..., 18.5, 18.6).

41. (New) The printing device in accordance with claim 1, wherein a cleaning device (54) for the receiving device (18.1, ..., 18.5, 18.6) is arranged at a closed track or the conveying circuit.

42. (New) The printing device in accordance with claim 1, wherein the cleaning device (54) is arranged following the last printing unit (10.6) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the conveying direction of the receiving device (18.1, ..., 18.5, 18.6), and the receiving device (18.1,

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..., 18.5, 18.6) can be introduced into the cleaning device (54) following the removal of the substrate (14.1, ..., 14.5, 14.6).

43. (New) The printing device in accordance with claim 1, wherein a cleaning device (54) is arranged upstream of the first printing unit (10.1) of the printing units (10.1, ..., 10.5, 10.6) arranged one behind the other in the conveying direction (A) of the receiving device (18.1, ..., 18.5, 18.6).

44. (New) The printing device in accordance with claim 1, wherein the substrate (14.1, ..., 14.5, 14.6) is respectively received in a separate receiving device (18.1, ..., 18.5, 18.6) downstream of the cleaning device (54) and upstream of the first printing unit (10.1) of the printing units (10.1, ..., 10.5, 10.6) in the conveying direction (A) of the receiving device (18.1, ..., 18.5, 18.6).

45. (New) The printing device in accordance with claim 1, wherein the transfer medium (12) is a transfer roller or a transfer belt containing at least a portion of the cooling device (12).

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46. (New) The printing device in accordance with claim 1, wherein the transfer medium (120) of the printing unit (10.1, ..., 10.5, 10.6) has a lower temperature in the transfer zone formed with the substrate (14.1, ..., 14.5, 14.6) at least in an area of the contact surface, than a surface of the substrate (14.1, ..., 14.5, 14.6).

47. (New) The printing device in accordance with claim 1, wherein the substrate (14.1, ..., 14.5, 14.6) rests on a conductive support of the receiving device (18.1, ..., 18.5, 18.6) and the support is charged with a reversed polarity sign compared with the charge of the toner.

48. (New) The printing device in accordance with claim 1, wherein the substrate (14.1, ..., 14.5, 14.6) is moved by the transport system (16) beyond the transfer medium (12) synchronously with a circumferential speed of the transfer medium (12), and a voltage which, with respect to the transfer medium, is opposite to the charge of the toner, is applied to the receiving device (18.1, ..., 18.5, 18.6) in the transport system (16).

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49. (New) The printing device in accordance with claim 1, wherein each said substrate (14.1, ..., 14.5, 14.6) is charged by the heating elements (20.1, ..., 20.5, 20.6) embodied as at least one of infrared radiation devices, hot-air blowers and by charging with heat energy.

50. (New) The printing device in accordance with claim 1, wherein each said substrate (14.1, ..., 14.5, 14.6) can be charged with heat energy by one of a metal tape heating and a metal foil heating device, wherein a wavelength of heat radiation can be exactly matched to an absorption maximum of at least one of the substrate and a plastic matrix of the toner.

51. (New) The printing device in accordance with claim 1, wherein a temperature sensor (26) is assigned to the substrate (14.1, ..., 14.5, 14.6), at least one of the heating element (20.1, ..., 20.5, 20.6) and the transport system (16) can be controlled by a control device (24) as a function of a signal emitted by the temperature sensor (26).

52. (New) The printing device in accordance with claim 1, wherein the temperature sensor (26) is a pyrometer.

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53. (New) The printing device in accordance with claim 1, wherein a conditioned air flow is directed onto a surface of at least one of the transfer medium (12) and at least one liquid-cooled contact roller of the cooling device (28) roll off on the transfer medium (12).

54. (New) The printing device in accordance with claim 1, wherein the cooling device (28) removes heat energy from the transfer medium (12) downstream of the transfer zone and upstream of the photo-conductor (30) of the printing unit (10.1), viewed in the transport direction of the transfer medium (12).